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(54) RETENTION CONTAINER

(57) A retention container (100) swaddles an object, such as a baby, by at least partially immobilizing a generally median region (114), such as the torso of the object, while still enabling substantially free movement by peripheral regions, such as the head and legs. A panel provides a stable surface for supporting the office. A strap adjustably wraps around the panel and the object positioned on the panel. The strap is configured to apply a pressure proximally to the middle portion (106) of the panel. The pressure is adjustable based on the tightness of the wrap. A barrier forms a contour around the edges of at least a portion of the first end portion (104) of the panel, and/or a middle portion (106) of the panel, and/or a second end portion (108) of the panel. The barrier provides a pliable, comfortable surface that restricts movement of the object beyond the edges of the panel.

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Description

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FIELD OF THE INVENTION

[0002] One or more embodiments of the invention generally relate to retention containers. More particularly, the invention relates to a retention container that swaddles an object by at least partially immobilizing a generally median region of the object while still enabling substantially free movement by peripheral regions of the object.

BACKGROUND OF THE INVENTION

[0003] The following background information may present examples of specific aspects of the prior art (e.g., without limitation, approaches, facts, or common wisdom) that, while expected to be helpful to further educate the reader as to additional aspects of the prior art, is not to be construed as limiting the present invention, or any embodiments thereof, to anything stated or implied therein or inferred thereupon.

[0004] The following is an example of a specific aspect in the prior art that, while expected to be helpful to further educate the reader as to additional aspects of the prior art, is not to be construed as limiting the present invention, or any embodiments thereof, to anything stated or implied therein or inferred thereupon. By way of educational background, another aspect of the prior art generally useful to be aware of is that an infant is a newborn, typically between 1 month and 12 months old. These infants require special tactile engagement, in addition to the known psychological nurturing of parents, especially the mother.

[0005] Typically, swaddling is a practice of wrapping infants in blankets or similar cloth so that movement of the limbs is tightly restricted. Swaddling is effective for settling and soothing irritable infants and helping babies sleep longer with fewer awakenings.

[0006] In many instances, modern swaddles are comprised of fabric blankets in a triangle, 'T' or 'Y' shape, with 'wings' that fold around the baby's torso or down over the baby's shoulders and around underneath the infant. Some of these swaddles employ Velcro patches or other fasteners. Though large blankets can also be used.

[0007] It is known that tight swaddling, particularly where the head is covered, reduces the baby's ability to cool its body temperature which can lead to hyperthermia. However, if the swaddling is too loose, the baby may easily remove the wrapping.

[0008] In view of the foregoing, it is clear that these traditional techniques are not perfect and leave room for more optimal approaches.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] The present invention is illustrated by way of example, and not by way of limitation, in the figures of the accompanying drawings and in which like reference numerals refer to similar elements and in which:

FIG. 1 illustrates a top perspective view of an exemplary retention container containing an exemplary object, in accordance with an embodiment of the present invention; and

FIG. 2 illustrates a top perspective view of an exemplary retention container containing an exemplary object, where the object is covered with a cover beneath an exemplary strap, in accordance with an embodiment of the present invention.

Unless otherwise indicated illustrations in the figures are not necessarily drawn to scale.

DETAILED DESCRIPTION OF SOME EMBODIMENTS

[0010] The present invention is best understood by reference to the detailed figures and description set forth herein.

[0011] Embodiments of the invention are discussed below with reference to the Figures. However, those skilled in the art will readily appreciate that the detailed description given herein with respect to these figures is for explanatory purposes as the invention extends beyond these limited embodiments. For example, it should be appreciated that those skilled in the art will, in light of the teachings of the present invention, recognize a multiplicity of alternate and suitable approaches, depending upon the needs of the particular application, to implement the functionality of any given detail described herein, beyond the particular implementation choices in the following embodiments described and shown. That is, there are numerous modifications and variations of the invention that are too numerous to be listed but that all fit within the scope of the invention. Also, singular words should be read as plural and vice versa and masculine as feminine and vice versa, where appropriate, and alternative embodiments do not necessarily imply that the two are mutually exclusive.

[0012] It is to be further understood that the present invention is not limited to the particular methodology, compounds, materials, manufacturing techniques, uses, and applications, described herein, as these may vary. It is also to be understood that the terminology used herein is used for the purpose of describing particular embod-

iments only, and is not intended to limit the scope of the present invention. It must be noted that as used herein and in the appended claims, the singular forms "a," "an," and "the" include the plural reference unless the context clearly dictates otherwise. Thus, for example, a reference to "an element" is a reference to one or more elements and includes equivalents thereof known to those skilled in the art. Similarly, for another example, a reference to "a step" or "a means" is a reference to one or more steps or means and may include sub-steps and subservient means. All conjunctions used are to be understood in the most inclusive sense possible. Thus, the word "or" should be understood as having the definition of a logical "or" rather than that of a logical "exclusive or" unless the context clearly necessitates otherwise. Structures described herein are to be understood also to refer to functional equivalents of such structures. Language that may be construed to express approximation should be so understood unless the context clearly dictates otherwise.

[0013] Unless defined otherwise, all technical and scientific terms used herein have the same meanings as commonly understood by one of ordinary skill in the art to which this invention belongs. Preferred methods, techniques, devices, and materials are described, although any methods, techniques, devices, or materials similar or equivalent to those described herein may be used in the practice or testing of the present invention. Structures described herein are to be understood also to refer to functional equivalents of such structures. The present invention will now be described in detail with reference to embodiments thereof as illustrated in the accompanying drawings.

[0014] From reading the present disclosure, other variations and modifications will be apparent to persons skilled in the art. Such variations and modifications may involve equivalent and other features which are already known in the art, and which may be used instead of or in addition to features already described herein.

[0015] Although Claims have been formulated in this Application to particular combinations of features, it should be understood that the scope of the disclosure of the present invention also includes any novel feature or any novel combination of features disclosed herein either explicitly or implicitly or any generalization thereof, whether or not it relates to the same invention as presently claimed in any Claim and whether or not it mitigates any or all of the same technical problems as does the present invention.

[0016] Features which are described in the context of separate embodiments may also be provided in combination in a single embodiment. Conversely, various features which are, for brevity, described in the context of a single embodiment, may also be provided separately or in any suitable subcombination. The Applicants hereby give notice that new Claims may be formulated to such features and/or combinations of such features during the prosecution of the present Application or of any further Application derived therefrom.

[0017] References to "one embodiment," "an embodiment," "example embodiment," "various embodiments," etc., may indicate that the embodiment(s) of the invention so described may include a particular feature, structure, or characteristic, but not every embodiment necessarily includes the particular feature, structure, or characteristic. Further, repeated use of the phrase "in one embodiment," or "in an exemplary embodiment," do not necessarily refer to the same embodiment, although they may.

[0018] Headings provided herein are for convenience and are not to be taken as limiting the disclosure in anyway.

[0019] The enumerated listing of objects does not imply that any or all of the objects are mutually exclusive, unless expressly specified otherwise.

[0020] The terms "a", "an" and "the" mean "one or more", unless expressly specified otherwise.

[0021] Devices or system modules that are in at least general communication with each other need not be in continuous communication with each other, unless expressly specified otherwise. In addition, devices or system modules that are in at least general communication with each other may communicate directly or indirectly through one or more intermediaries.

[0022] A description of an embodiment with several components in communication with each other does not imply that all such components are required. On the contrary a variety of optional components are described to illustrate the wide variety of possible embodiments of the present invention.

[0023] As is well known to those skilled in the art many careful considerations and compromises typically must be made when designing for the optimal manufacture of a commercial implementation any system, and in particular, the embodiments of the present invention. A commercial implementation in accordance with the spirit and teachings of the present invention may configured according to the needs of the particular application, whereby any aspect(s), feature(s), function(s), result(s), component(s), approach(es), or step(s) of the teachings related to any described embodiment of the present invention may be suitably omitted, included, adapted, mixed and matched, or improved and/or optimized by those skilled in the art, using their average skills and known techniques, to achieve the desired implementation that addresses the needs of the particular application.

[0024] The present invention will now be described in detail with reference to embodiments thereof as illustrated in the accompanying drawings.

[0025] There are various types of swaddling containers and wraps for partially immobilizing and retaining an object that may be provided by preferred embodiments of the present invention. In one embodiment of the present invention, a retention container swaddles an object by at least partially immobilizing a generally median region of the object, while still enabling substantially free movement by peripheral regions of the object. Those skilled in the art will recognize that the swaddling provided by

the retention container may settle and sooth irritable infants, and help babies sleep longer with fewer awakenings. The object may include, without limitation, a baby, an animal, food, or a valuable object.

[0026] In some embodiments, the retention container may provide a stable, substantially rigid panel for the object to rest on. The panel may include a first end portion, a second end portion, and a middle portion. A softer layer of material may overlay the panel.

[0027] The retention container utilizes a single adjustable strap that wraps around both the panel and a median region of the object. Because the strap wraps underneath the rigid surface, the weight of the object holds the strap in place, preventing unraveling or detachment. The tightness of the strap is easily adjustable by lifting the panel and pulling or releasing the strap as needed. The strap may be broad enough to form a wide force of pressure on a median region of the object, while leaving the peripheral region of the object free.

[0028] In some embodiments, a barrier may partially wrap around the edges of the panel to prevent the object from moving or falling off the panel. The barrier may have a sufficient height above the panel to restrict movement by the object beyond the edges of the panel. The barrier may be sufficiently soft and fluffy, so as to provide a comfortable surface for the object to lean or bump against.

[0029] FIG. 1 illustrates a top perspective view of an exemplary retention container 100 containing an exemplary object, in accordance with an embodiment of the present invention. In one aspect, a retention container swaddles an object 114 by at least partially immobilizing a generally median region 114 of the object, while still enabling substantially free movement by peripheral region 116a, 116b of the object. The object may include, without limitation, a baby, an animal, food, or a valuable object.

[0030] In one possible embodiment, the retention device introduces an easy-to-use swaddling snuggly that immobilizes an infant's arms while placing gentle, even pressure on the infant's torso, restricting leg movement without excessive pressure, and leaving the infant's head unencumbered. The use of a single strap 112 that wraps across the median region of the baby removes the problems associated with tangling, folding, and rewrapping commonly encountered with traditional swaddles. These various pressures and restrictions on the baby's body regions occur within the soft confines of the device. However, in other embodiments, any number of objects may also be restrained similarly in the retention container. Due to these advantages, retention container may settle and sooth irritable infants, and help babies sleep longer with fewer awakenings.

[0031] Those skilled in the art, in light of the present teachings, will recognize that loosely-swaddled babies tend to be more restless than snugly-swaddled infants. However, overly tight swaddling may inhibit breathing. The baby is generally comforted by having its arms held snugly against the midsection and by having even pressure applied around the torso. Limitations on leg movement may also help to sooth the baby, but complete immobilization of the legs may promote hip dysplasia. Additionally, excessive pressure against the head is counterproductive. Too thin a wrap may provide inadequate restraint, but too heavy a wrap may overheat the infant. The retention container provides a uniform pressure across the median section of the baby, while leaving the peripheral region relatively free to move.

[0032] In some embodiments, the retention container may provide a stable, substantially rigid panel 102 for the object to rest on. The panel is defined by a first end portion 104, a middle portion 106, and a second end portion 108. In one embodiment, when the object is a baby, the head of the baby rests against the edge of the first end, inside the perimeter of the panel. The first end portion may be the widest portion of the panel. The panel is also defined by a middle portion. The panel is also defined by a second side, where, in some embodiments, the aforementioned baby's feet may orient towards.

[0033] In one embodiment, the panel measures between 21" X 13" at the widest point (first end portion). The panel can weigh about 314 grams or 11 ounces. The panel may have sufficient rigidity to support at least ten pounds. The panel may rest on a soft surface such as a bed to form a softer surface. However, a padding may be used to overlay a top side of the panel for direct engagement with the object, thus forming a more comfortable, less rigid surface.

[0034] The retention container may utilize a strap that wraps around both the panel and a median region of the object. Because the strap wraps underneath the panel, the weight of the object holds the strap in place, preventing unraveling or detachment. Additionally, the tightness of the strap is easily adjustable by lifting the panel and pulling or releasing the strap as needed. In one embodiment, the strap has measurements of about 29" X 2.5".

[0035] The strap may be broad enough to form a wide force of pressure on the median region of the object. However, the peripheral region of the object, such as the head and the legs remain free to move within the confines of the retention container. Suitable materials for the strap may include, without limitation, Spandex™, nylon, polyester, cotton, leather, rubber, rope fiber, bamboo, a non-woven material, cotton/polyester blend, ribbed cotton, elastic, cotton, cotton waffle, viscose georgette, polyester georgette, rayon, satin, cotton crepe, rayon, crepe, flex, linen, poplin, cambric, sheeting, denim, silk denim, knits, cotton check, cotton, crepe check, silk, terry cloth, and cotton interwoven with sterling silver thread.

[0036] Though many other fabrics known in the art may be used instead or in addition, depending on the desired characteristics needed. In one embodiment, the characteristics that may determine the material composition of the strap may include, without limitation, elasticity, warmth, weight, breathability, stain resistance, absence of allergens, visual appeal, and other factors. The strap may be made of a single material or parts may be made

of different materials. Flexible, non-fabric materials may also be used to provide special characteristics.

[0037] In some embodiments, a barrier may partially wrap around the edges of the panel to prevent the object from moving or falling off the panel. The barrier may encircle at least a portion of the edges of the panel. In one embodiment, the barrier has a substantially U-shape. Though in one embodiment, the barrier contours the edge of the second end and a portion of the middle portion of the panel. The barrier may have a sufficient height above the panel to restrict movement by the object beyond the edges of the panel. The barrier may be sufficiently soft and fluffy, so as to provide a comfortable surface for the object to lean or bump against. The barrier may be permanently attached to the edge of the panel, or detachable. When detachable, the position of the barrier around the edges of the panel may be altered as required.

[0038] In one alternative embodiment, the barrier folds out a blanket to cover the object across the width of the panel. Suitable materials for the barrier may include, without limitation, an interior composition of soft filling, and an exterior cloth, cotton, or polyester. The barrier may be made of a single material or parts may be made of different materials.

[0039] FIG. 2 illustrates a top perspective view of an exemplary retention container containing an exemplary object, where the object is covered with a cover 200 beneath an exemplary strap, in accordance with an embodiment of the present invention. In one aspect, the object may be covered by a cover, such as a blanket. The strap may encircle both the object and the cover. The cover provides an additional level of protection against exterior elements, including, without limitation, cold air, moisture, loud noises, debris, and humidity. The cover may also provide an element of privacy for the object.

[0040] It will be further apparent to those skilled in the art that at least a portion of the novel method steps and/or system components of the present invention may be practiced and/or located in location(s) possibly outside the jurisdiction of the United States of America (USA), whereby it will be accordingly readily recognized that at least a subset of the novel method steps and/or system components in the foregoing embodiments must be practiced within the jurisdiction of the USA for the benefit of an entity therein or to achieve an object of the present invention. Thus, some alternate embodiments of the present invention may be configured to comprise a smaller subset of the foregoing means for and/or steps described that the applications designer will selectively decide, depending upon the practical considerations of the particular implementation, to carry out and/or locate within the jurisdiction of the USA. For example, any of the foregoing described method steps and/or system components which may be performed remotely over a network (e.g., without limitation, a remotely located server) may be performed and/or located outside of the jurisdiction of the USA while the remaining method steps and/or system components (e.g., without limitation, a locally located client) of the forgoing embodiments are typically required to be located/performed in the USA for practical considerations. In client-server architectures, a remotely located server typically generates and transmits required information to a US based client, for use according to the teachings of the present invention. Depending upon the needs of the particular application, it will be readily apparent to those skilled in the art, in light of the teachings of the present invention, which aspects of the present invention can or should be located locally and which can or should be located remotely. Thus, for any claims construction of the following claim limitations that are construed under 35 USC §112 (6) it is intended that the corresponding means for and/or steps for carrying out the claimed function are the ones that are locally implemented within the jurisdiction of the USA, while the remaining aspect(s) performed or located remotely outside the USA are not intended to be construed under 35 USC §112 (6).

[0041] All the features disclosed in this specification, including any accompanying abstract and drawings, may be replaced by alternative features serving the same, equivalent or similar purpose, unless expressly stated otherwise. Thus, unless expressly stated otherwise, each feature disclosed is one example only of a generic series of equivalent or similar features.

[0042] It is noted that according to USA law 35 USC §112 (1), all claims must be supported by sufficient disclosure in the present patent specification, and any material known to those skilled in the art need not be explicitly disclosed. However, 35 USC §112 (6) requires that structures corresponding to functional limitations interpreted under 35 USC §112 (6) must be explicitly disclosed in the patent specification. Moreover, the USPTO's Examination policy of initially treating and searching prior art under the broadest interpretation of a "mean for" claim limitation implies that the broadest initial search on 112(6) functional limitation would have to be conducted to support a legally valid Examination on that USPTO policy for broadest interpretation of "mean for" claims. Accordingly, the USPTO will have discovered a multiplicity of prior art documents including disclosure of specific structures and elements which are suitable to act as corresponding structures to satisfy all functional limitations in the below claims that are interpreted under 35 USC §112 (6) when such corresponding structures are not explicitly disclosed in the foregoing patent specification. Therefore, for any invention element(s)/structure(s) corresponding to functional claim limitation(s), in the below claims interpreted under 35 USC §112 (6), which is/are not explicitly disclosed in the foregoing patent specification, yet do exist in the patent and/or non-patent documents found during the course of USPTO searching, Applicant(s) incorporate all such functionally corresponding structures and related enabling material herein by reference for the purpose of providing explicit structures that implement the functional means claimed. Applicant(s) request(s) that fact finders during any claims construction

proceedings and/or examination of patent allowability properly identify and incorporate only the portions of each of these documents discovered during the broadest interpretation search of 35 USC §112 (6) limitation, which exist in at least one of the patent and/or non-patent documents found during the course of normal USPTO searching and or supplied to the USPTO during prosecution. Applicant(s) also incorporate by reference the bibliographic citation information to identify all such documents comprising functionally corresponding structures and related enabling material as listed in any PTO Form-892 or likewise any information disclosure statements (IDS) entered into the present patent application by the USPTO or Applicant(s) or any 3rd parties. Applicant(s) also reserve its right to later amend the present application to explicitly include citations to such documents and/or explicitly include the functionally corresponding structures which were incorporate by reference above.

[0043] Thus, for any invention element(s)/structure(s) corresponding to functional claim limitation(s), in the below claims, that are interpreted under 35 USC §112 (6), which is/are not explicitly disclosed in the foregoing patent specification, Applicant(s) have explicitly prescribed which documents and material to include the otherwise missing disclosure, and have prescribed exactly which portions of such patent and/or non-patent documents should be incorporated by such reference for the purpose of satisfying the disclosure requirements of 35 USC §112 (6). Applicant(s) note that all the identified documents above which are incorporated by reference to satisfy 35 USC §112 (6) necessarily have a filing and/or publication date prior to that of the instant application, and thus are valid prior documents to incorporated by reference in the instant application.

[0044] Having fully described at least one embodiment of the present invention, other equivalent or alternative methods of implementing a barrier to restrict objects from passing through openings in support objects according to the present invention will be apparent to those skilled in the art. Various aspects of the invention have been described above by way of illustration, and the specific embodiments disclosed are not intended to limit the invention to the particular forms disclosed. The particular implementation of the barrier to restrict objects from passing through openings in support objects may vary depending upon the particular context or application. By way of example, and not limitation, the barrier to restrict objects from passing through openings in support objects described in the foregoing were principally directed to an inflatable barrier that blocks objects from rolling or being inadvertently moved beneath a sofa implementations; however, similar techniques may instead be applied to blocking objects from passing through crevices under factory machines, fryers, and desks in offices, which implementations of the present invention are contemplated as within the scope of the present invention. The invention is thus to cover all modifications, equivalents, and alternatives falling within the spirit and scope of the following claims. It is to be further understood that not all of the disclosed embodiments in the foregoing specification will necessarily satisfy or achieve each of the objects, advantages, or improvements described in the foregoing specification.

[0045] Claim elements and steps herein may have been numbered and/or lettered solely as an aid in readability and understanding. Any such numbering and lettering in itself is not intended to and should not be taken to indicate the ordering of elements and/or steps in the claims.

[0046] The corresponding structures, materials, acts, and equivalents of all means or step plus function elements in the claims below are intended to include any structure, material, or act for performing the function in combination with other claimed elements as specifically claimed.

[0047] The Abstract is provided to comply with 37 C.F.R. Section 1.72(b) requiring an abstract that will allow the reader to ascertain the nature and gist of the technical disclosure. It is submitted with the understanding that it will not be used to limit or interpret the scope or meaning of the claims. The following claims are hereby incorporated into the detailed description, with each claim standing on its own as a separate embodiment.

Claims

1. A container comprising:

a generally elongated panel configured to support an object, said panel defined by a first end portion, a middle portion, and a second end portion;

a strap configured to adjustably wrap around said panel and said object positioned on said panel, said strap further configured to apply a pressure proximally to said middle portion of said panel; and

a barrier configured to form a contour around at least a portion of said first end portion, and/or said middle portion, and/or said second end portion,

wherein said strap applies said pressure to a median region of said object while enabling free movement of a peripheral region of said object.

2. The container of claim 1, wherein said container is substantially rigid, configured to swaddle, and the panel is about 21 inches by 13 inches.

3. The container of claim 2, wherein said first end portion is wider than said second end portion, said panel comprises edges and said strap is substantially stretchable.

4. The container of claim 3, in which said strap is about

29 inches by 2.5 inches and is fabricated from Spandex™, or nylon, or a cotton/polyester blend.

5. The container of claim 4, wherein said pressure is formed directly from the tightness of said strap around said object and said panel.

6. The container of claim 5, wherein said barrier is fabricated from cotton and soft filler compost.

7. The container of claim 6, in which said object comprises a baby.

8. The container of claim 7, in which said median region is a torso.

9. The container of claim 8, in which said peripheral region is a head and/or a pair of legs.

10. A container comprising:

means for forming a supportive surface for an object;
means for wrapping said supportive means and said object;
means for applying a restrictive pressure on a median region of said object, while enabling unrestricted movement for a peripheral region of said object; and
means for restricting movement beyond said supportive means.

11. The container of claim 10, in which said supportive means has a generally elongated shape.

12. The container of claim 11, further containing means for covering said object.

13. The container of claim 12, in which said wrapping means has a length of about 21 inches.

14. The container of claim 13, further containing means for unwrapping said wrapping means from said supportive means.

15. A container consisting of:

a generally elongated panel configured to support an object, said object comprising a baby, said panel defined by a first end portion, a middle portion, and a second end portion, wherein said first end portion is wider than said second end portion;
a strap configured to adjustably wrap around said panel and said object positioned on said panel, said strap further configured to apply a pressure proximally to said middle portion of said panel, said pressure adjustable based on the tightness of the wrap; and
a barrier configured to form a contour around said second end portion and a portion of said middle portion, said barrier comprising a generally pliable composition,
wherein said strap applies said pressure to a median region of said object while enabling free movement of a peripheral region of said object.

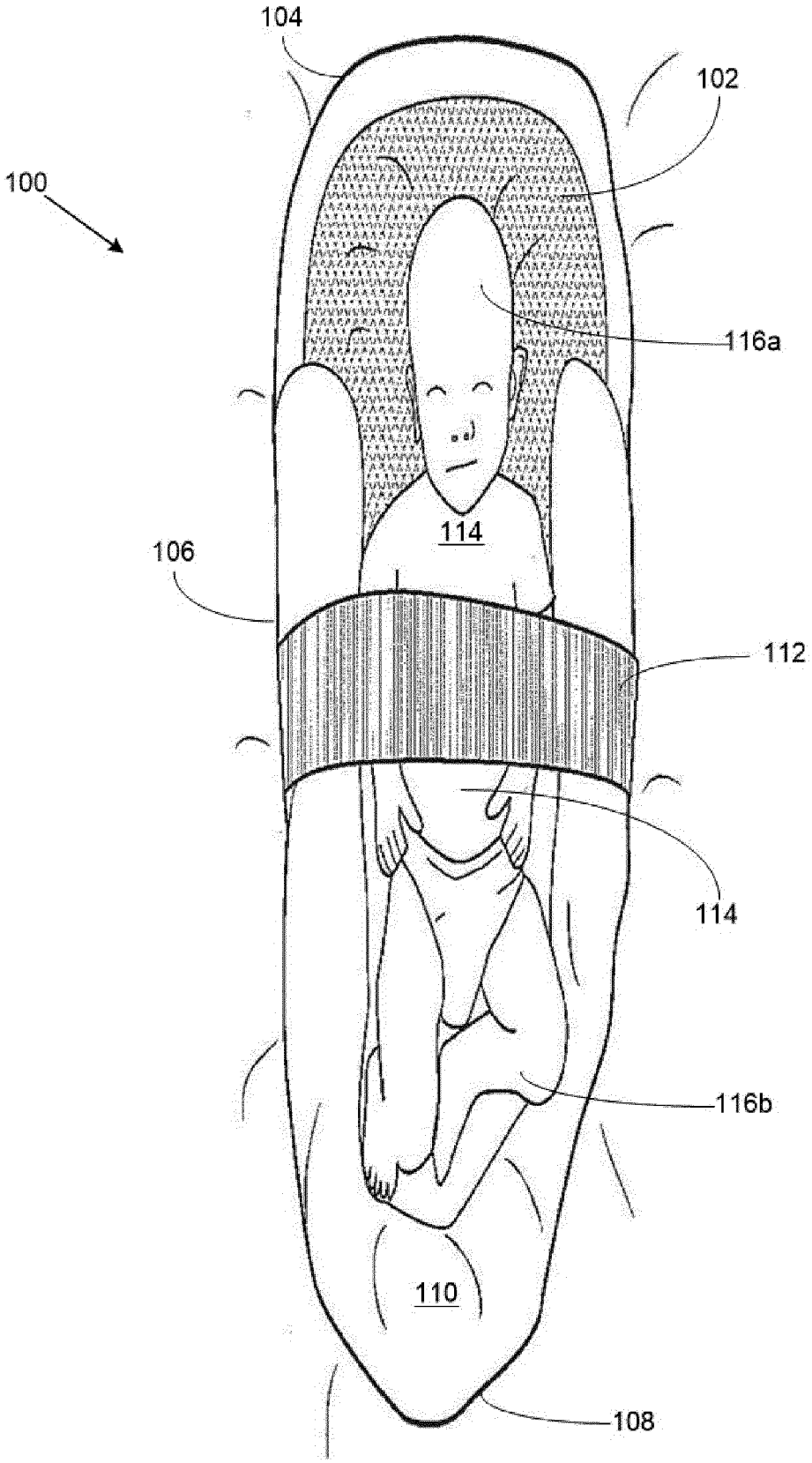

FIG. 1

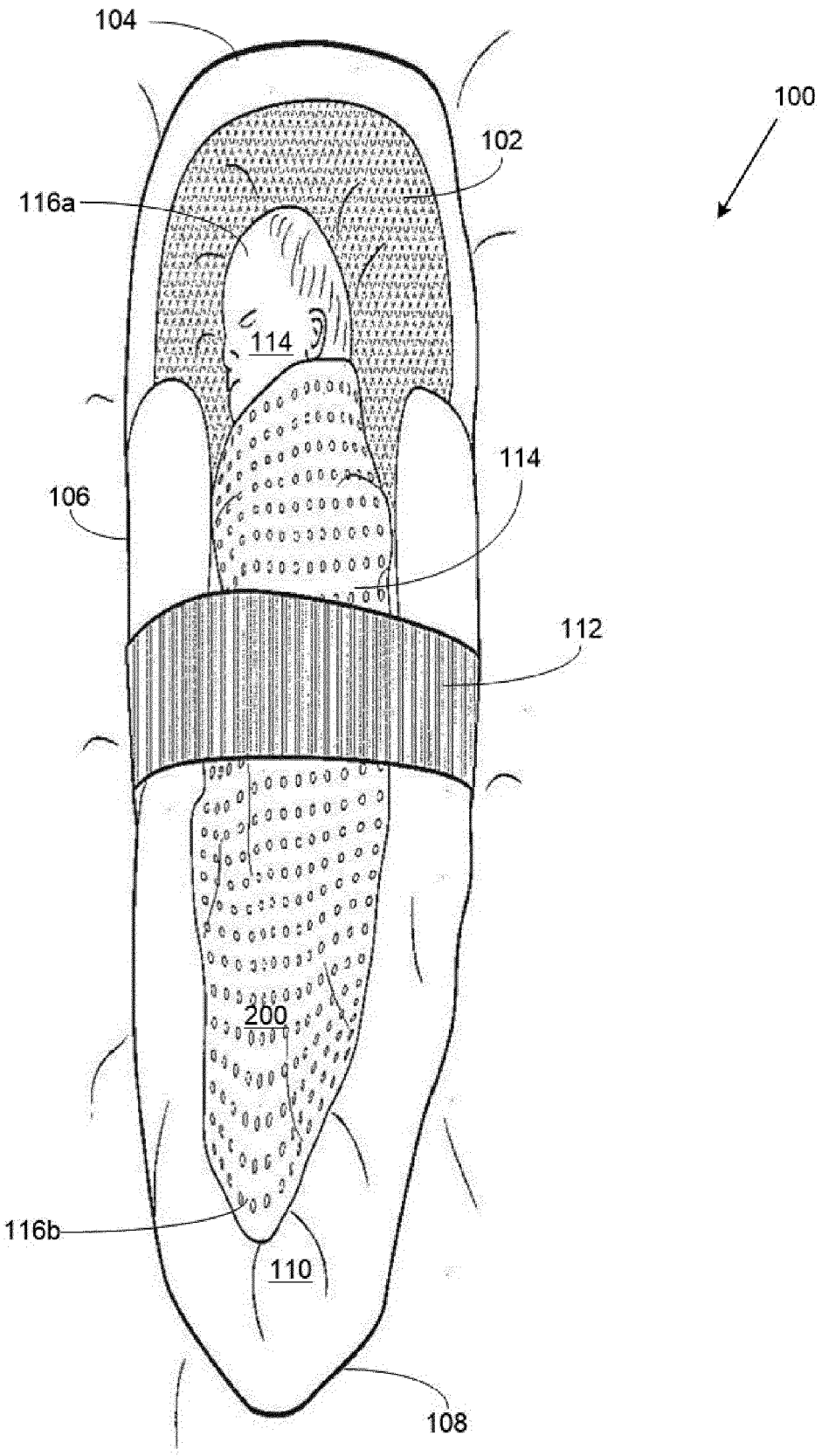

FIG. 2

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EUROPEAN SEARCH REPORT

Application Number
EP 15 19 9345

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	WO 2006/065332 A1 (GRACO CHILDRENS PROD INC [US]; COOLEY KARA MELINDA [CN]; CATON MARGUER) 22 June 2006 (2006-06-22) * claims; figures * -----	1,10,15	INV. A47D13/02 A47D13/08 A47D15/00
X	JP 2005 230113 A (COMBI CO) 2 September 2005 (2005-09-02) * see a legally non-binding machine translation of this document at: http://worldwide.espacenet.com/?locale=en_EP then put the publication number mentioned above in the field box.; figures * -----	1,10,15	
X	KR 2014 0000410 U (YOON J K) 20 January 2014 (2014-01-20) * see a legally non-binding machine translation of this document at: http://worldwide.espacenet.com/?locale=en_EP then put the publication number mentioned above in the field box.; figures * -----	1,10,15	TECHNICAL FIELDS SEARCHED (IPC) A47D
X	CN 103 445 573 A (LU YONGE) 18 December 2013 (2013-12-18) * see a legally non-binding machine translation of this document at: http://worldwide.espacenet.com/?locale=en_EP then put the publication number mentioned above in the field box.; figures * -----	1,10,15	
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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	5 February 2016	Amghar, Norddin

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
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T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

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EPO FORM 1503 03.82 (P04C01)

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EUROPEAN SEARCH REPORT

Application Number
EP 15 19 9345

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	CN 1 656 979 A (COMBI CO [JP]) 24 August 2005 (2005-08-24) * see a legally non-binding machine translation of this document at: http://worldwide.espacenet.com/?locale=en_EP then put the publication number mentioned above in the field box.; figures * -----	1-15	

TECHNICAL FIELDS SEARCHED (IPC)

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	5 February 2016	Amghar, Norddin

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 15 19 9345

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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